IN THE SPECIFICATION:

At page 26, please replace the paragraph beginning at line 6 with the following amended paragraph:

--Referring next to FIG. 4, depicted is the multipole 20 of FIG. 3 as it is incorporated between two trapping multipoles 22 & 24. The trapping multipoles 22 & 24 are held at a higher DC potential than the central multipole 20. This arrangement allows for a more homogeneous quadrupolar field within the analysis multipole 20 and the ions at the center and at the ends of the multipole 20 [10] will have the same motion. All of the RF electrodes 18a, 18b & 18c of the trapping multipoles and the analyzing multipoles will have the same potentials and frequencies. Therefore, RF electrodes 18a are capacitively coupled to 18b and 18c. --

At page 26, replace the paragraph beginning at line 17 with the following amended paragraph:

--Turning now to FIG. 5, depicted is a single multipole 26 with a single set of RF electrodes 28, and detection electrodes 30 divided into three sections. The divisions made by the detection electrodes 30 define the trapping sections 32 & 36, and the analyzing section 34. The detection electrodes 30 in the trapping sections 32 & 36 are held at a DC potential (e.g., in the range from 0.1 volts to 100 volts) with respect to the central detection electrodes 30 to trap ions in the central analyzing region 34. The detection electrodes 30a [30b] & 30c in the two trapping regions 32 &34 are not used for detection. Instead, these electrodes 30a [30b] & 30c are held at a DC potential with respect to the central detection electrodes 30b [30a]. In this embodiment, the RF field generated by the RF electrodes 28 may be substantially homogeneous within the

multipole. --

At page 27, replace the paragraph beginning at line 10 with the following amended paragraph:

--Finally, referring to FIG. 6, depicted is a mass spectrometer employing the preferred embodiment of the linear multipole trap of FIG. 5 using an atmospheric pressure ion source 38. The ions are transferred by gas flow through a capillary 40 into a first differential pumping region 42 from an elevated pressure source 56. Some ions then pass into a second differential pumping region through a skimmer 44. The ions then enter the first trapping multipole 60 of the multipole device 54. The pressure of the second pumping region 46 [56] allows the gas of the first rapping section 60 to cool the ions to near room temperature. Ions are then allowed to enter the central analyzing region 62 of the multipole 54 within a third pumping region 54. Before reaching the analysis section, the ions move into yet a third pumping region, which is separated from the second pumping region by a pumping restriction. The third pumping region 48 [54] is at a lower pressure than the second pumping region 56 to produce a higher resolution mass spectrum. This is important for producing long transients during ion detection and therefore a higher resolution mass spectrum. Once the ions are in the analysis section, a DC potential is applied to the DC electrodes of the first trapping section such that ions become trapped in the analysis section of the linear multipole trap through the combination of the RF and DC fields between the electrodes. Optionally, the trapping potential on the DC electrodes of the second trapping section may be kept on continuously. --

At page 28, replace the paragraph beginning at line 15 with the following amended paragraph:

--In the analysis region 62, a DC potential is applied to the DC electrodes 68 of the first trapping section 60 to stop the ions from escaping the analysis region 62. Again, ions are excited into periodic motion by an electrical pulse applied between either the RF 64 or DC electrodes 66, 68 & 770. After the excitation pulse is turned off, the ions are detected b y charge induction on the detection electrodes 72 [66]. Using the apparatus of figure 6, tandem mass spectrometry experiments may be formed. --

IN THE DRAWINGS

Please substitute the attached replacement drawings (Figure 4 and Figure 6) for the originally filed drawings. The attached replacement drawings have been amended to correct for informalities as indicated in red on the attached annotated sheets of these drawings. No new matter has been added.